



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

# SCIENCE

EDITORIAL COMMITTEE: S. NEWCOMB, Mathematics; R. S. WOODWARD, Mechanics; E. C. PICKERING, Astronomy; T. C. MENDENHALL, Physics; R. H. THURSTON, Engineering; IRA REMSEN, Chemistry; J. LE CONTE, Geology; W. M. DAVIS, Physiography; O. C. MARSH, Paleontology; W. K. BROOKS, C. HART MERRIAM, Zoology; S. H. SCUDDER, Entomology; N. L. BRITTON, Botany; HENRY F. OSBORN, General Biology; H. P. BOWDITCH, Physiology; J. S. BILLINGS, Hygiene; J. McKEEN CATTELL, Psychology; DANIEL G. BRINTON, J. W. POWELL, Anthropology.

FRIDAY, JULY 16, 1897.

## CONTENTS:

<i>On the Theory of Organic Variation:</i> H. S. WILLIAMS .....	73
<i>Microscopical Examination of Water, with a Description of a Simple Form of Apparatus:</i> GEORGE C. WHIPPLE .....	85
<i>Spectrum Color Standards:</i> J. H. PILLSBURY .....	89
<i>Pleistocene Fossils from Baffinland and Greenland:</i> E. M. KINDEL .....	91
<i>Current Notes on Physiography:—</i>	
<i>The Sierra Nevada; North Carolina and its Resources; Dungeness Foreland; A Fault Line in Afghanistan:</i> W. M. DAVIS .....	93
<i>Scientific Notes and News:</i> .....	94
<i>University and Educational News:</i> .....	98
<i>Discussion and Correspondence:—</i>	
<i>A Brilliant Meteor:</i> ALEXANDER GRAHAM BELL, GEORGE KENNAN .....	99
<i>Scientific Literature:—</i>	
<i>What are Stipules?</i> LESTER F. WARD. <i>Thomas on the Genera of Rodents:</i> T. S. PALMER .....	100
<i>Societies and Academies:—</i>	
<i>New York Academy of Sciences, Section of Biology:</i> C. L. BRISTOL, G. N. CALKINS .....	107

MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Prof. J. McKeen Cattell, Garrison-on-Hudson, N. Y.

## ON THE THEORY OF ORGANIC VARIATION.\*

As the evolution question becomes more and more deeply examined the particular phenomena described under the terms variation and heredity are concentrating much closer observation and thought. The whole philosophy of the matter seems to turn upon the interpretation of these phenomena.

\* An address delivered before the Philosophical Club of Yale College, April 1, 1897.

In this discussion biologists and those who are engaged in adjusting biological theories to the systems of human thought appear to be resting on the assumption that the great result of the speculations of the last fifty years has been the furnishing of a rational explanation of the so-called natural causes of variation of organisms in their morphological and physiological aspects. This assumption appears to be associated with another, which in some sense is its antithesis, *i. e.*, that those organic phenomena which recur in relatively uniform cycles in successive generations of organisms are fundamental, are the expressions of the intrinsic nature of organic matter, and thus lie beyond the immediate investigation of science. According to this view, heredity (*a*) is not caused, but is a primary law of all organisms; variation (*b*) is a departure from the strict operation of the law of recurrence in generation; and thus external environment (*c*), or the general conditions of being in which organisms exist, is effective in its interaction with the intrinsic energies of the organism in diverting or modifying the natural expression of those energies, to the causing of that diversity and heterogeneity of form and operation which we see about us. This is, as I understand it, a fair expression of the general attitude of thinking men toward the problem in question. This position has received little consideration because it has